

LOUISIANA DEPARTMENT OF NATURAL RESOURCES  
COASTAL RESTORATION DIVISION

***PARISH COASTAL WETLANDS RESTORATION PROGRAM***

HISTORY OF CHRISTMAS TREES

The Louisiana Department of Natural Resources/Coastal Engineering Division (LDNR/CED) is responsible for designing and implementing projects that will restore, create, enhance, and maintain Louisiana's coastal wetlands. Louisiana experiences 25-35 square miles of marsh loss each year; ***that's eighty percent of the nation's total wetland loss!*** Many different types of restoration projects have already been constructed throughout the state's coastal zone.

One innovative restoration technique is the use of the Christmas tree brush fence. This is a wave-stilling device that decreases wave energies, resulting in the capture of suspended sediment in coastal marshes.

The Louisiana Christmas Tree Program originated from a similar erosion-control technique used in the Netherlands. In 1986, Louisiana State University scientists constructed brush fences using willow limbs and branches. Although this brush fence was effective, it required too much effort to build.

In 1989, LDNR/CED constructed a prototype brush fence project using Christmas trees at the La Branche Wetlands in St. Charles Parish. Twenty-three brush fences were built and filled with 8,000 used Christmas trees obtained from local citizens. This project was successful and set the stage for the LDNR/CED Parish Coastal Wetlands Restoration Program (PCWRP), otherwise known as the Christmas Tree Program.

The PCWRP expanded in 1990 to all coastal zone parishes through LDNR/CED and has now been in existence for fourteen years. During this time over 40,000 linear feet, or approximately eight (8) miles, of brush fences have been built, with over 1,302,000 Christmas trees utilized. Jefferson Parish alone has used over 764,000 Christmas trees to fill brush fences and abandoned oil field canals.

HOW DO BRUSH-FENCES WORK?

The primary goal of brush fences is to slow fetch and trap sediments. They function by reducing wave energies, while allowing the movement of water and sediments without being a solid barrier.

Brush fence enclosures are constructed out of wood and filled with clean, discarded Christmas trees. String or rope is attached to the top of the brush fences after the Christmas trees are placed to prevent them from floating away. Brush fences are most effective in lower wave action areas where the water depths are shallower than two feet.

Brush fences have been constructed in several types of locations including: open water bodies, shoreline protection, along the Gulf Intracoastal Waterway, interior lakes, and abandoned oilfield canals.

The PCWRP also allows for the planting of vegetation behind the brush fences. Other LDNR/CED vegetation projects have been coordinated with PCWRP projects. This expedites the growth of vegetation in newly accreted areas.

### WHY ARE CHRISTMAS TREES ARE USED?

Christmas trees are large yet lightweight and easy to move. When placed inside the brush fences, Christmas trees allow movement of water and sediment without being a barrier. The limbs are organic and provide an ideal fisheries habitat. Although Christmas trees are seasonal, they are plentiful and readily available.

### WHY ARE PARISHES INVOLVED?

The PCWRP is offered annually to the 19 coastal zone parishes. The LDNR/CED funds and oversees the work in each participating parish. It is through the efforts of the coastal zone parishes and their local citizens that this program is successful.

Parishes are important because they: (1) implement the PCWRP; (2) are familiar with sites; (3) are able to solicit local volunteers to collect and move Christmas trees; (4) spend their funds within the local community; and (5) are able to increase local awareness of coastal restoration. Working with parishes creates a good working relationship between the state and parish agencies. The annual collection of Christmas trees and placement into the marsh has become a part of the Christmas tradition in many of the parishes.

Volunteers are important for the success of the PCWRP. Individuals and corporations have donated enormous amounts of their time and equipment in making the PCWRP work. For example Jefferson Parish utilizes about 3,500 volunteer hours each year. The Louisiana Air National Guard has provided 15 personnel and two helicopters the past eight years to airlift the Christmas tree bundles. The actual costs for use of the helicopters would be immense if not for their support and generosity.

### WHAT ARE THE BENEFITS OF USING CHRISTMAS TREES?

Christmas tree brush fences are beneficial in three primary ways: (1) recycling; (2) public awareness/education of coastal restoration issues; and (3) habitat.

## RECYCLING

The amount of landfill space in the United States is reduced every day, and much of what is taking up the space is yard waste. By utilizing Christmas trees in wetland projects, we relieve overburdened landfills and stimulate a natural recycling process.

With many Christmas trees used in the PCWRP having been grown in Louisiana, we have one local natural resource protecting another local natural resource. In fourteen years of the PCWRP over 1,302,000 Christmas trees have been diverted from landfills and placed into the marsh.

## PUBLIC AWARENESS/EDUCATION

The PCWRP has increased public awareness of problems nationally and locally in our coastal zone and environment. When individuals donate their used Christmas trees to the cause of coastal restoration, they make their own personal contribution. It is a way for people to have personal interaction in restoring the marsh.

In 1996, President Clinton donated 50 Christmas trees from the White House which were placed into the Louisiana marsh. This reflects the national awareness of protecting our coastal marsh.

Between December of 1997 and February of 1999 over 250 articles on the PCWRP appeared in state and national newspapers. In 1998 NOAA included a feature on the program in its *Coastal Services* publication. In 1999, National Public Radio's *Living on Earth Program* came to Louisiana and did a story which aired world wide. Additionally, each year local television stations regularly feature news stories on the program. LDNR/CED regularly receives requests for additional information from students and citizens on the program for school projects. In the October 2004 issue of the National Geographic, a photograph of the PCWRP was used in conjunction with a feature story on Louisiana's coastal wetlands.

Jefferson Parish has received several awards for its PCWRP project including: the 1994 National Association of Counties Environmental Award, the 1995 Bureau of Governmental Research Excellence in Government Keller Award, the 1996 Renew America National Award for Environmental of Sustainability, and the 2000 Solid Waste Association of North America Award.

The LDNR/CED has provided input for brush fences which have been constructed at Chesapeake Bay in Maryland, Staten Island in New York, and Weeks Bay in Alabama. Other inquiries have been received from California, Texas, North Carolina and Florida.

## HABITAT

Besides trapping sediments and building marsh, brush fences can enhance wetland habitats in several important ways by: (1) providing an effective wave-break which can reduce erosion of marshes; (2) enhancing water clarity which allows more submerged aquatic vegetation to become established; (3) providing important reef areas for many fish and crustacean species; (4) stimulating the formation of new marsh and vegetation. Birds have been found nesting in the brush fences.

## WHO MONITORS THE PROGRESS?

The LDNR/CED monitors all PCWRP projects using four different methods: ground photography, shoreline configuration markers, aerial photography, and elevation surveys.

Ground photography is taken from consistent locations and illustrates any vegetative community changes. Shoreline configuration markers consist of PVC stakes placed on the original shoreline at project implementation. Any shoreline changes are visibly seen adjacent to the markers. Aerial photography provides for comparative shoreline change documentation. Elevation surveys measure changes in sediment levels over the same transects.

#### WHAT IS THE FUTURE OF THE CHRISTMAS TREE FENCES?

Results show the PCWRP is successful and has many benefits. The PCWRP has become a favorite of local citizens. Interest in the Christmas tree fence design has even sparked national attention. The LDNR/CED is pleased to continue administering the PCWRP in our efforts to save Louisiana's coastal wetlands.

#### FACTS

The 2004 Christmas season will mark the 15th consecutive year of the PCWRP. About 40,000 linear feet or eight (8) miles of brush fences have been constructed, utilizing over 1,302,000 used Christmas trees. Fifteen coastal parishes and Southeastern Louisiana University will participate in the 2004–05 PCWRP. Most parishes will restock or refurbish existing fences. Participating parishes are Calcasieu, Cameron, Iberia, Jefferson, Lafourche, Orleans, St. Bernard, St. Charles, St. James, St. John the Baptist, St. Martin, St. Mary, St. Tammany, Terrebonne, and Vermilion. Southeastern Louisiana University will participate in place of Tangipahoa parish. Trees will be picked up curbside or as advertised locally.

For additional information call or write to: Keith Lovell or Kenneth Bahlinger at (225) 342-7308 or:

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